HD10 / HD8 SubWoofers

- HD10 - 750W Continuous Power
- HD8 - 500W Continuous Power
- Dual Opposing Heavy Passive Radiators
- Vibration Absorbing Feet
- Small, Space Saving Footprint

To state the obvious, deep bass is fundamental to realistic sound reproduction. Music and movies alike depend heavily on the lowest octaves of human hearing to communicate the power, impact, and "you-are-there" excitement of the sonic experience.

But your hearing can't respond to what isn't present, and reproducing true deep bass accurately, dynamically, and musically is no small matter. Neither is doing so from a conventionally engineered ultra-compact subwoofer. In fact, it borders on the impossible.

Fortunately, PSB is no conventional company. For three decades and more PSB has been creating innovative, high-performance, high-value solutions to the challenges of sound reproduction. Company founder Paul Barton and the PSB team are internationally known for leading fundamental research into loudspeakers, room acoustics, listener response, and the interactions among them. Consequently, PSB's cumulative knowledge-base on the workings of sound reproduction is an unequalled resource, one that uniquely positions PSB to create loudspeakers and subwoofers that work optimally under real-world conditions to fulfill the needs of real-world customers.

By declining, as always, to accept standard-practice design norms as immutable rules, the talented PSB engineering team has created the PSB HD8 and HD10 to provide astonishing deep bass, high output performance from cubes measuring only 10-1/2" and 12" respectively.

The Challenge

The challenge of subwoofer design can be summed up quite simply yet completely as follows. "Small, deep, loud: pick two." Achieving all three goals from a single design package – with PSB's legendary musicality – is on the face of things an impossible task, one that requires overturning, or at least overpowering, the laws of physics. PSB's HD8 and HD10 do so with a singular combination of brute force and engineering finesse.

Frankly, the brute force was the easy part. The HD8 and HD10 employ sophisticated Class H amplifiers that produce 500 and 750 watts of continuous power respectively (and some 1,600 and 2,000 watts of peak dynamic potential) allied with PSB's "smart bass" monitoring system to preserve accurate musicality at even the highest volumes and lowest frequencies. Equally important, they do so from electronics smaller in size

and with far less heat than conventional amps—a key factor in the HD subs' sleight of hand.

The finesse was a little bit harder. By creating highly specialized low-frequency drivers of exceptionally high mass and extraordinary "pumping" ability (thanks to extremely long-excursion cones and remarkable power-handling and linearity), PSB had the first element of the equation. The remainder is found in the tiny, exhaustively computer-modeled HD8 and HD10 enclosures, and in their dual-opposed high-mass passive radiators.

A passive radiator – essentially a large, massy, motor-less cone diaphragm with specialized suspension – replaces the port in a vented or "bass-reflex" speaker design (generally the lowest-distortion subwoofer option). In our "small, deep, loud" engineering conundrum, as we make the enclosure smaller, the port must also shrink to maintain the same deep-bass extension. But at the optimum port diameter, length must grow, via labyrinthine internal ductwork that for true extension necessitates six or eight feet or more of length. Effectively requiring more internal volume than a small cabinet affords – and forget about room for driver, amplifier, or controls – this presents a bit of a problem. The PSB HD subs' dual passive radiators crack this dilemma. Carefully calculated to complement each model, they tune the HD cabinets to frequencies similar to that of much larger enclosures.

SPECIFICATIONS

	HD10 Ultra-Compact Powered Subwoofer	HD8 Ultra-Compact Powered Subwoofer
Frequency Range **On Axis @ 0°±3dB** **LF Cutoff -10dB**	 **30-150Hz** **28Hz**	 **35-150Hz** **33Hz**
Input Power **Continuous** Dynamic, **Peak**	(Internal Amplifier) **750 Watts** 1000 Watts, **2000 Watts**	(Internal Amplifier) **500 Watts** 800 Watts, **1600 Watts**
Acoustic Design **Woofer (Nominal)** **Crossover** **Design Type**	 **1 x 10" (250mm)** 2 x 10" Passive Radiator Polypropylene Cone **Variable 50-150Hz,**LR4 Low Pass Filter **Passive Radiator**	 **1 x 8" (200mm)** 2 x 8" Passive Radiator Polypropylene Cone **Variable 50-150Hz,**LR4 Low Pass Filter **Passive Radiator**
Net Dimensions (W x H x D) **Gross Dimensions*** (W x H x D)	**12 x 12 x 12"** (305 x 305 x 305mm) **12 9/16 x 12 13/16 x 13 1/8"** (319 x 325 x 333mm)	**10 1/2 x 10 1/2 x 10 1/2"** (267 x 267 x 267mm) **11 x 11 5/16 x 11 5/8"** (279 x 287 x 295mm)
Weight **Net** Shipping	 **38.0 lb (17.2kg)/each** 45.0 lb (20.4kg)/each	 **25.0 lb (11.3kg)/each** 30.0 lb (13.6kg)/each
Finish	**Satin Black**	**Satin Black**
Features	Rear mounted volume, crossover & continuously variable phase controls, Auto on/off, LFE input/output, LL Stereo in/out, HL Stereo in with 5-way gold plated binding posts, 12V Trigger	Rear mounted volume, crossover & continuously variable phase controls, Auto on/off, LFE input/output, LL Stereo in/out, HL Stereo in with 5-way gold plated binding posts, 12V Trigger

* Gross dimensions include volume knob / speaker terminals / connectors / feet / grilles.
Note: Installers should allow a minimum clearance of 2 - 4 inches for wire management.

There's more. PSB's dual-opposed high-mass passive radiators achieve unprecedented excursion in their own right—as much as two inches peak-to-peak—in order to preserve output down to the very lowest notes and deepest sounds. Their progressive suspension preserves near-perfect motion, and thus low-distortion clarity, at all frequencies and drive levels. And by arranging the dual passive radiators on opposing cabinet faces, unwanted vibrations are cancelled and more energy is launched out into the room as deep bass—and the HD8 and HD10 are rendered much less likely to shake and "walk" across a hard floor, as some well-known sub-compact subs are known to do. (To inhibit any residual such tendency, PSB developed special compliant feet that keep the HD subs in place on any surface, even marble flooring.) Extra-heavy-duty aluminum cast woofer "baskets," oversized magnet structures, and large-diameter, ultra-high power voice coils are just three more elements that empower the HD8 and HD10 to churn out musically accurate low frequencies — and to continue to do so for years to come.

Music First

The HD models' bantam size and impressive power and deep-bass extension are not the whole story, however. PSB adamantly believes that music remains the truest test, and thus will not sacrifice accuracy to first impressions. Rejecting the hyped-up response by which many smaller subs disguise a dearth of true low-frequency ability, the HD models' focus, like that of all PSB subs, is honest, controlled, musically accurate low bass. Like their bigger PSB cohorts, they exploit "intelligent" amplifiers with sophisticated circuitry that helps match each sub's drivers, enclosure, and electronics into a balanced system. The result? Controlled, "quick," impact-rich sound extending to the very lowest octaves, without the boom or bloat of all too many compact woofers.

Lastly, PSB recognizes that even the largest, most powerful subwoofer will someday encounter its limits—sooner rather than later, if there's a teenager involved. Thus, like virtually every maker of serious subwoofers we design in electronic monitoring and controls. The PSB HD8 and HD10 are among the industry's "smartest," with rigorously modeled algorithms that match each model's capabilities, and that are shaped to follow statistical models of actual music and filmsound rather than test tones. Like all such well-designed circuits, PSB guards the HD models from undergoing dangerous overdrive or producing obvious distortion; unlike most, they do so without crushing the dynamic subtleties from music, or compromising the thunderous impact of big-action filmsound.

Why "HD"?

Contrary to what you might guess, the "HD" in HD8 and HD10 does not denote "high definition"—though their eminently musical low-frequency performance certainly qualifies. Instead, it stands for "high density." If you took a PSB HD sub apart (please don't!) you would find that its driver, dual-opposed high-mass passive radiators, and power-amp/electronics modules interlock to virtually fill the tiny enclosure's interior, much like one of those carved wooden puzzles that seem so simple yet only fit together in one precise, brain-stretching fashion.

While the HD Subwoofers' technical details may be of interest mostly to engineers, their results should be obvious to all: Deep, powerful, high-impact reproduction of even the most challenging soundtracks and musical performances—all from subwoofers with an ultra-compact footprint. Real-world musicality that's second to none. Virtually unlimited extension to the very threshold of audibility. And mind-bending, solar-plexus-massaging bass.